

CLAIMS

What is claimed is:

1. A method for transmitting packet headers in a network adapter across a network comprising:
 - storing in a host memory protocol headers and application data into packet buffers;
 - storing in a cache on the network adapter a MAC header; and
 - transmitting the stored packet buffers and stored MAC header across a network.
2. The method as recited in claim 1 further comprising:
 - storing in the host memory a tag indicating a location of the MAC header in the cache;
 - retrieving the tag; and
 - accessing the stored MAC header at the location indicated by the tag when transmitting the MAC header across the network.
3. The method as recited in claim 1 further comprising:
 - storing the protocol headers and application data in a host memory on a personal computer; and
 - passing the stored protocol headers and application data to the network adapter using a direct memory access controller that retrieves data and headers from the host memory and writes the retrieved data in the network adapter.
4. The method as recited in claim 3 further comprising:
 - determining if the MAC header is different from to a MAC header previously transmitted; and
 - storing the MAC header in the host memory if the MAC header is different from the MAC header previously transmitted.
5. The method as recited in claim 4 further comprising, passing the MAC header in host memory using the direct memory access controller and writing the retrieved MAC header in the network adapter.
6. The method as recited in claim 1 further comprising receiving the protocol headers, application data and MAC header from an operating system.

7. The method as recited in claim 3 further comprising:

storing the MAC header into cache on the network adapter using a processor writing the MAC header over a personal computer bus into cache located on the network adapter card; and

passing the protocol headers and application data using a direct memory access controller located on the personal computer bus.

Table 1. The distribution of the 1000 subjects in the study	
Age group (years)	Number of subjects
15-19	100
20-24	100
25-29	100
30-34	100
35-39	100
40-44	100
45-49	100
50-54	100
55-59	100
60-64	100
65-69	100
70-74	100
75-79	100
80-84	100
85-89	100
90-94	100
95-99	100
100-104	100
105-109	100
110-114	100
115-119	100
120-124	100
125-129	100
130-134	100
135-139	100
140-144	100
145-149	100
150-154	100
155-159	100
160-164	100
165-169	100
170-174	100
175-179	100
180-184	100
185-189	100
190-194	100
195-199	100
200-204	100
205-209	100
210-214	100
215-219	100
220-224	100
225-229	100
230-234	100
235-239	100
240-244	100
245-249	100
250-254	100
255-259	100
260-264	100
265-269	100
270-274	100
275-279	100
280-284	100
285-289	100
290-294	100
295-299	100
300-304	100
305-309	100
310-314	100
315-319	100
320-324	100
325-329	100
330-334	100
335-339	100
340-344	100
345-349	100
350-354	100
355-359	100
360-364	100
365-369	100
370-374	100
375-379	100
380-384	100
385-389	100
390-394	100
395-399	100
400-404	100
405-409	100
410-414	100
415-419	100
420-424	100
425-429	100
430-434	100
435-439	100
440-444	100
445-449	100
450-454	100
455-459	100
460-464	100
465-469	100
470-474	100
475-479	100
480-484	100
485-489	100
490-494	100
495-499	100
500-504	100
505-509	100
510-514	100
515-519	100
520-524	100
525-529	100
530-534	100
535-539	100
540-544	100
545-549	100
550-554	100
555-559	100
560-564	100
565-569	100
570-574	100
575-579	100
580-584	100
585-589	100
590-594	100
595-599	100
600-604	100
605-609	100
610-614	100
615-619	100
620-624	100
625-629	100
630-634	100
635-639	100
640-644	100
645-649	100
650-654	100
655-659	100
660-664	100
665-669	100
670-674	100
675-679	100
680-684	100
685-689	100
690-694	100
695-699	100
700-704	100
705-709	100
710-714	100

- 1 8. A computer system transmitting packet headers across a network comprising:
2 a processor having a host memory to store protocol headers and application data into
3 packet buffers;
4 a network adapter having a local cache to store a MAC header;
5 a DMA controller operative to pass data from the host memory to said network
6 adapter; and
7 said network adapter being operative to transmit both the stored packet buffers passed
8 by the DMA controller and the MAC header stored in the local cache across a
9 network.
- 1 9. The computer system as recited in claim 8 wherein said processor is operative to store in
2 the host memory a tag indicating a location of the MAC header in the cache and operative
3 to retrieve the tag from host memory and pass the tag to the network adapter; and wherein
4 said network adapter is responsive to the tag being passed by the processor to access the
5 stored MAC header at the location indicated by the tag when transmitting the MAC
6 header across a network.
- 1 10. The computer system as recited in claim 9 further comprising:
2 a personal computer having a host memory to store the protocol headers and
3 application data; and
4 a direct memory access controller to pass the host memory protocol headers and
5 application data to the network adapter from the host memory and to write the
6 retrieved data in the network adapter.

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- 1 11. An article comprising:
- 2 a storage medium having a plurality of instructions, which when executed by a
- 3 processor, cause transmission of packets by:
- 4 storing in a host memory protocol headers and application data into packet
- 5 buffers;
- 6 storing in a cache on the network adapter a MAC header; and
- 7 transmitting the stored packet buffers and stored MAC header across a
- 8 network.
- 1 12. The article as recited in claim 11 further comprising instructions to store in the host
- 2 memory a tag indicating a location of the MAC header in the cache; retrieve the tag; and
- 3 access the stored MAC header at the location indicated by the tag when transmitting the
- 4 MAC header across a network.
- 1 13. The article as recited in claim 11 further comprising instructions to:
- 2 store the protocol headers and application data in a host memory on a personal
- 3 computer; and
- 4 pass the host memory protocol headers and application data to the network adapter
- 5 using direct memory access controller that retrieves data and headers from the host
- 6 memory and writes the retrieved data in the network adapter.
- 1 14. The article as recited in claim 13 further comprising instructions to:
- 2 determine if the MAC header is different from to the MAC header previously
- 3 transmitted; and
- 4 store the MAC header in the host memory if the MAC header is different from the
- 5 MAC header previously transmitted.
- 1 15. The article as recited in claim 14 further comprising instructions to pass the MAC header
- 2 in host memory using the direct memory access controller and to write the retrieved MAC
- 3 header in the network adapter.
- 1 16. The article as recited in claim 11 further comprising instructions to receive the protocol
- 2 headers, application data and MAC header from an operating system.
- 1 17. The article as recited in claim 13 further comprising instructions to:

store the MAC header into cache on the network adapter using a processor writing the
MAC header over a personal computer bus into cache located on the network adapter
card; and
pass the protocol headers and application data using a direct memory access controller
located on the personal computer bus.

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1 18. A computer system for transmitting packet headers across a network comprising:
2 processor means having a host memory to store protocol headers and application data
3 into packet buffers;
4 adapter means having a local cache for storing a MAC header;
5 DMA controller means for passing data from the host memory to said network
6 adapter; and
7 said network adapter having means for transmitting both the stored packet buffers
8 passed by the DMA controller and the MAC header stored in the local cache across a
9 network.

1 19. The computer system as recited in claim 18 further comprising:
2 said processor having means for storing in the host memory a tag indicating a location
3 of the MAC header in the cache and for retrieving the tag from host memory and for
4 passing the tag to the network adapter; and
5 said adapter means being responsive to the tag being passed by the processor means
6 and having means to access the stored MAC header at the location indicated by the
7 tag when transmitting the MAC header across a network.

1 20. The computer system as recited in claim 19 further comprising:
2 a PC means having a host memory for storing the protocol headers and application
3 data; and
4 a DMA means for passing the host memory protocol headers and application data to
5 the network adapter from the host memory and for writing the retrieved data in the
6 network adapter.

